OSC Dollhopf

WESTON SM MANAGERS DESIGNERS/CONSULTANTS
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TECHNICAL ASSISTANCE TEAM FOR EMERGENCY RESPONSE REMOVAL AND PREVENTION
EPA CONTRACT 68-01-7367

Mr. Duane Heaton
Deputy Project Officer
Emergency Support Section, 5HS-11
U.S. Environmental Protection Agency
230 South Dearborn St.
Chicago, Illinois 60604

January 4, 1990

TAT-05-G2-01586

Re: Albion-Sheraton Township Landfill, Albion, Michigan
TDD# 5-8910-04

Dear Mr. Heaton:

On October 5, 1989, the U.S. Environmental Protection Agency (U.S. EPA) tasked the Technical Assistance Team (TAT) to collect additional samples of suspected hazardous waste from drums on the surface of the Albion-Sheraton Township Landfill (AST Landfill) in Albion, Michigan. The attached report provides details of sampling performed at the AST Landfill, analytical results, and a removal action plan.

The AST Landfill is an abandoned 30-acre landfill located one mile east of Albion, Michigan. Municipal and industrial waste was accepted for disposal at the landfill, which is on the National Priorities List. On July 19, 1989, the TAT collected three samples of suspected hazardous waste at the landfill; however, subsequent analysis indicated the sampled material was not hazardous.

On October 12, 1989, the TAT returned to the AST Landfill and collected four samples of suspected hazardous waste not previously sampled on July 19, 1989. Analysis of these additional samples indicated that hazardous wastes were present at the AST Landfill, as defined by the Resource Conservation and Recovery Act (RCRA) characteristics for hazardous waste (ignitable and spent solvents). These wastes were contained in deteriorating drums on the landfill surface.

Roy F. Weston, Inc.
MAJOR PROGRAMS DIVISION
In Association with ICF Technology, Inc., C.C. Johnson & Malhotra, P.C., Resource Applications, Inc., and R.E. Sarriera Associates

WESTON

At the request of On-Scene Coordinator Ralph Dollhopf, the TAT prepared an action plan for the removal of hazardous waste from the landfill surface. This proposed removal action plan and associated cost estimates are included in the attached report.

Should you have any questions or require additional information, please feel free to contact us.

Very truly yours,

ROY F. WESTON, INC.

Sally Matz

FOR Jerry Boeckman
Geologist

William R Doyle

William R. Doyle
Technical Assistance Team
Leader, Region V

JB/dn

att.

cc: R. Dollhopf, OSC

ALBION-SHERIDAN TOWNSHIP LANDFILL

REMOVAL ACTION PLAN

ALBION, MICHIGAN

Prepared for:

U.S. Environmental Protection Agency
Region V
230 South Dearborn Street
Chicago,Illinois

CONTRACT NO. 68-01-7367

TAT-05-G2-01586

TDD NO. 5-8910-04

Prepared by:

WESTON - MAJOR PROGRAMS
Technical Assistance Team
Region V

January 1990

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1.0 SITE DESCRIPTION

The Albion-Sheridan Township Landfill (AST Landfill) is a closed and abandoned 30-acre landfill, which is a National Priorities List (NPL) site. Located at 13355 29-Mile Road, one mile east of Albion, Calhoun County, Michigan (Figure 1), the AST Landfill accepted municipal refuse, as well as industrial waste (e.g., metallic sludge, paint residues, and spent solvents) for disposal.

The topography of the site varies approximately 15 feet from level to rolling terrain, and the landfill surface is covered with a sandy soil, which supports a vegetative cover of grasses and scattered trees. Adjacent to the northeastern, northwestern, and southwestern borders of the site are residences, and the Kalamazoo River is approximately 1,200 feet south of the landfill.

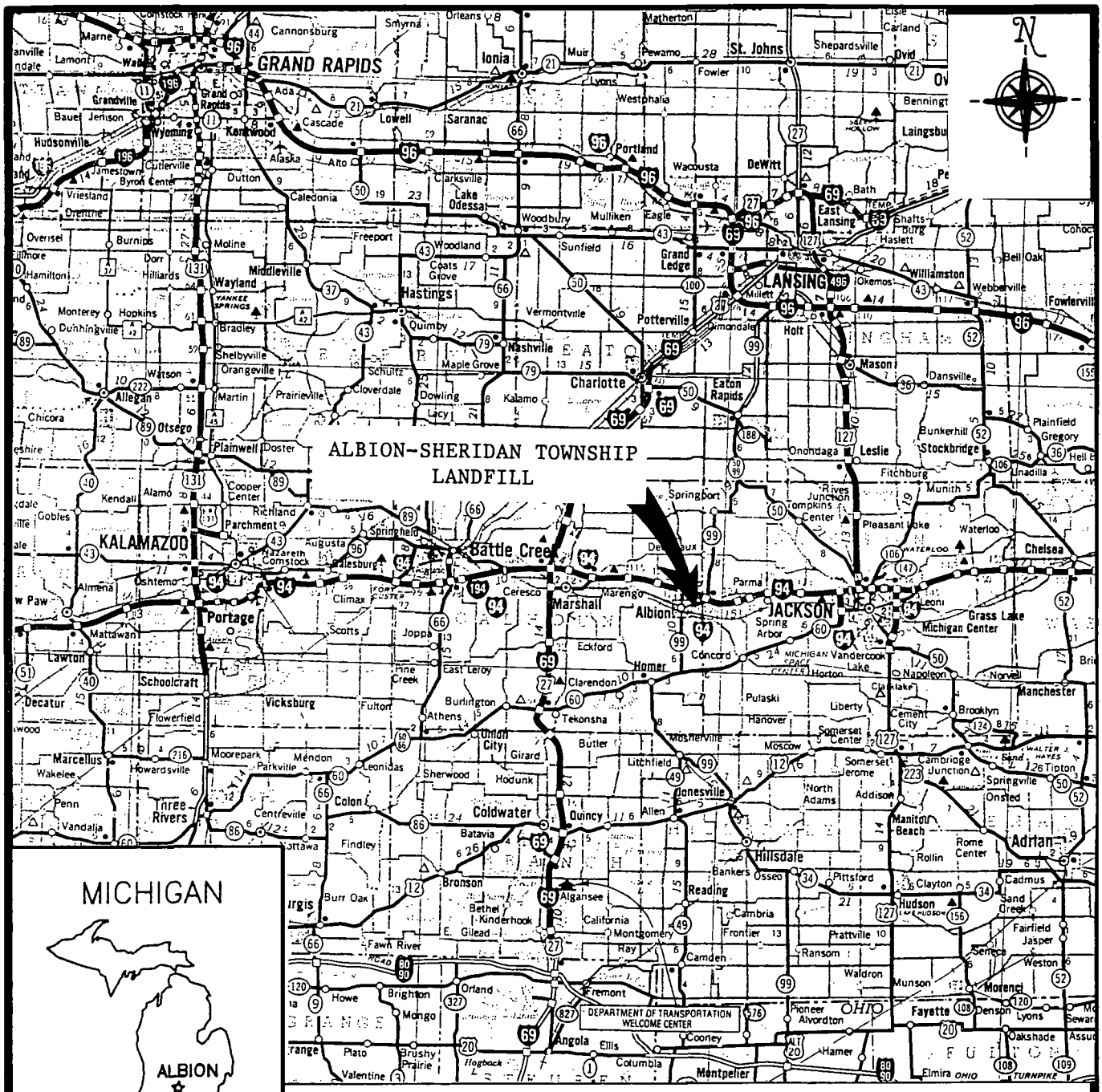
According to a report dated March 19, 1986, by the United States Environmental Protection Agency (U.S. EPA) Field Investigation Team (FIT), approximately 13,500 persons obtain their drinking water from public and private wells within a 3-mile radius of the AST Landfill. A publication by the Michigan Department of Natural Resources (MDNR) Water Management Division, Municipal Water Withdrawals In Michigan, reports that wells in the vicinity of the AST Landfill draw ground water from two distinct water-bearing units. The uppermost unit consists of unconsolidated glacial deposits ranging in thickness from 41 to 90 feet, and underlying the glacial deposits is the Marshall Sandstone Formation. These two aquifers are considered to be hydraulically connected. According to the FIT report, ground water flow in the vicinity of the landfill is to the south/southwest.

2.0 SITE BACKGROUND

2.1 Operational History And Ownership

The AST Landfill was active from 1966 until its closure in 1981. Gordon Stevick, the owner and operator of the landfill until his death in July 1989, is survived by his wife, Margaret Stevick of Cement City, Michigan. According to Mrs. Stevick's attorney, Charles McClafferty of Jackson, Michigan, the Stevicks have not paid property taxes on the landfill site since 1980; consequently, current ownership of the property is uncertain.

The MDNR collected waste samples at the landfill in 1980; analysis of the samples indicated that metallic sludge accepted by the landfill contained cyanide [2,100 milligrams per kilogram (mg/kg)] and heavy metals as follows: chromium (250,000 mg/kg), zinc (150,000 mg/kg), nickel (1,000 mg/kg), and lead (280 mg/kg). During its operation, the AST Landfill accepted approximately 1,975



MICHIGAN

SOURCE: MICHIGAN DEPARTMENT OF TRANSPORTATION – 1989

FIGURE 1

SITE LOCATION MAP

ALBION–SHERIDAN TOWNSHIP LANDFILL

ALBION, MICHIGAN

SCALE: 1 INCH = 14.5 MILES

WESTON
MANAGERS DESIGNERS/CONSULTANTS

DRAWN BY	DATE	PCS #
J. BOECKMAN	10–23–89	2428
APPROVED BY	DATE	TDD #
J. BINKLEY	10–23–89	5–8910–04

cubic yards (yd^3) of metallic sludge and 35,000 drums of paint wastes and spent solvents. Following the FIT site inspection and report in 1986, the AST Landfill site was placed on the NPL.

2.2 Ground Water Monitoring Activities

During 1988 and 1989, the Calhoun County Health Department (CCHD), in conjunction with the Michigan Department of Public Health (MDPH), sampled 21 private wells in the vicinity of the AST Landfill (Figure 2). This well sampling and analysis was part of a ground water contamination investigation of the Brooks Foundry and McGraw-Edison/Cooper Industries sites to the west and northwest, respectively, of the landfill site.

All well samples were analyzed for the presence of Target Compound List volatile organic compounds (VOCs). Sample analysis indicated VOC contamination at only three locations: 6 Orchard Knoll, 289 Martin Drive, and the Brooks Foundry at 1712 E. Michigan Ave. Table 1 presents well sampling locations, dates, and contaminant concentrations. In wells at 1712 E. Michigan Avenue and 6 Orchard Knoll, one VOC contaminant (1,1,1-trichloroethane) exceeded the removal action level for contaminated drinking water sites (U.S. EPA Office of Solid Waste and Emergency Response Directive 9360.1-10).

The CCHD and MDPH also sampled two wells that serve the residents of the Amberton Village Subdivision, which is located approximately 1,000 feet east of the AST Landfill. These two wells are owned and operated by Parma Township, Jackson County, Michigan, and although samples from the wells have been collected annually for the past 2 years, no detectable levels of VOC or metal contamination have been detected in either of the two wells.

Three of Albion's seven municipal wells are located in the Clark Street Well Field (approximately 1 mile northwest of the AST Landfill). The remaining four Albion wells (the Brownswood and Albion Street wells) are located approximately 2.5 miles west of the landfill. Low levels of tricholorethylene (TCE) were detected previously in two of the Clark Street wells; however, TCE has not been detected in these wells since 1984. According to Terri Zick of the CCHD, the TCE contamination is believed to be associated with operations at the McGraw-Edison/Cooper Industries site, which is adjacent to the well field. Although benzene and methyl-tert-butyl ether were detected in the Brownswood wells in 1988, this contamination was believed to be associated with three leaking underground storage tanks located near the wells. The City of Albion placed the Brownswood wells in a secondary pumping position, and since that time, no contamination has been detected (a 9-month period). Because of previous contamination problems, VOC monitoring of all City of Albion municipal wells is performed monthly.

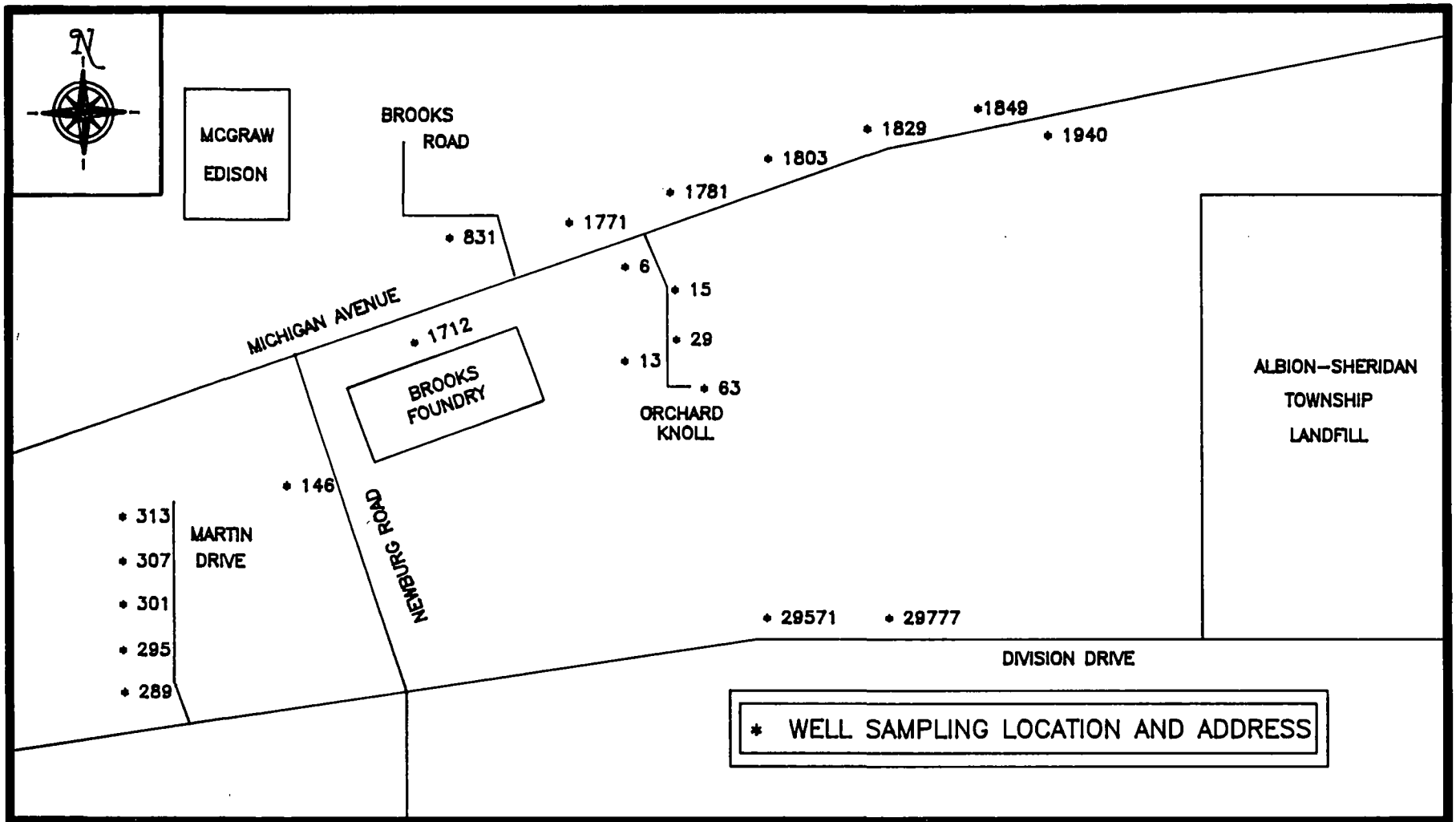


FIGURE 2

WELL SAMPLING LOCATIONS

ALBION–SHERIDAN TOWNSHIP LANDFILL

ALBION, MICHIGAN

MAP NOT DRAWN TO SCALE

WESTON MANAGERS DESIGNERS/CONSULTANTS

DRAWN BY J. BOECKMAN	DATE 11–22–89	PCS # 2428
APPROVED BY J. BINKLEY	DATE 11–22–89	TDD # 5–8910–04

TABLE 1

WELL SAMPLING RESULTS DURING 1988-1989[a]
MICHIGAN DEPARTMENT OF PUBLIC HEALTH
ALBION-SHERIDAN TOWNSHIP LANDFILL
ALBION, MICHIGAN
(All results in mg/liter)

WELL LOCATION	DATE SAMPLED	VOLATILE ORGANIC[b] COMPOUNDS DETECTED	CONTAMINANT CONCENTRATION
831 Brooks Road	09-12-89	ND	
29571 Division Dr.	05-03-89	ND	
29777 Division Dr.	05-03-89	ND	
1712 E. Michigan Ave.	06-26-88	Fluorotrichloromethane	2 mg/l
		1,1,1-Trichloroethane	1 mg/l
	07-20-88	ND	
1771 E. Michigan Ave.	04-28-89	ND	
	09-12-89	ND	
1781 E. Michigan Ave.	09-12-89	ND	
1803 E. Michigan Ave.	09-12-89	ND	
1829 E. Michigan Ave.	09-12-89	ND	
1849 E. Michigan Ave.	09-12-89	ND	
1940 E. Michigan Ave.	09-12-89	ND	
289 Martin Dr.	09-12-89	Toluene	1 mg/l
295 Martin Dr.	09-12-89	ND	
301 Martin Dr.	09-12-89	ND	
307 Martin Dr.	09-12-89	ND	
313 Martin Dr.	09-12-89	ND	
146 Newburg	05-03-89	ND	
6 Orchard Knoll	05-03-89	Fluorotrichloromethane	40 mg/l
		1,1-Dichloroethane	2 mg/l
		1,1,1-Trichloroethane	14 mg/l
	06-26-89	1,1,1-Trichloroethane	15 mg/l
13 Orchard Knoll	06-28-89	ND	
15 Orchard Knoll	09-12-89	ND	
29 Orchard Knoll	09-12-89	ND	
63 Orchard Knoll	09-18-89	ND	

[a]Source: Michigan Department of Public Health, November 6, 1989.
[b]Volatile Organic Compounds
ND - Not Detected at Method Detection Limits.

Three monitoring wells are installed at the AST Landfill site (Figure 3). According to available records, the wells were installed in approximately 1980; however, no records were available concerning VOC analysis of samples collected from these wells. Both CCHD and MDNR personnel anticipate additional sample collection and analysis.

2.3 Previous TAT Investigation

On July 19, 1989, the U.S. EPA requested the TAT to review the AST Landfill site information for a possible removal action. Following a review of the available data and interviews with State and local officials, the U.S. EPA requested the TAT to conduct a site investigation.

During the site investigation on August 15, 1989, the TAT collected samples of suspected hazardous waste from two different 55-gallon drums and from the ground surface adjacent to the drums. Analysis of the three samples indicated the material did not exhibit any hazardous waste characteristics defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR Parts 261.20-261.24. On October 5, 1989, the U.S. EPA requested that TAT return to the AST Landfill site to collect samples from the drums that were not sampled on August 15, 1989.

3.0 SITE ASSESSMENT

On October 12, 1989, TAT members Jerry Boeckman, Kerry Hanlon, and Dan Weed met Brendan Boyle, Field Investigator for the MPDH, and Terri Zick, Sanitarian for the CCHD, at the AST Landfill site.

During an initial site tour with Mr. Boyle and Ms. Zick, the TAT observed a locked gate on the southeastern corner of the site, which prevented vehicle access to a road that entered the south side of the site (Figure 3). On the north side of the site, however, vehicle access was unrestricted. The TAT observed no other security fences or warning signs on the site perimeter. A row of large trees lined the eastern and western edges of the site, and although no hunters were seen on the site, TAT observed spent shotgun shells along the road that traversed the site.

A "For-Sale" sign was posted near the southern entrance (Division Dr.) of the landfill site. According to Betty Michalski of the MDNR, the phone number on the sign (517-787-0477) connects the caller to Jerry Richardson of Jackson, Michigan. The portion of the landfill for sale is unknown.

The northeastern portion of the landfill contained several large piles of demolition debris (brick, metal, and wood) and a large borrow pit. Except for some recently cut brush deposited near the borrow pit, TAT observed no evidence of recent dumping in this

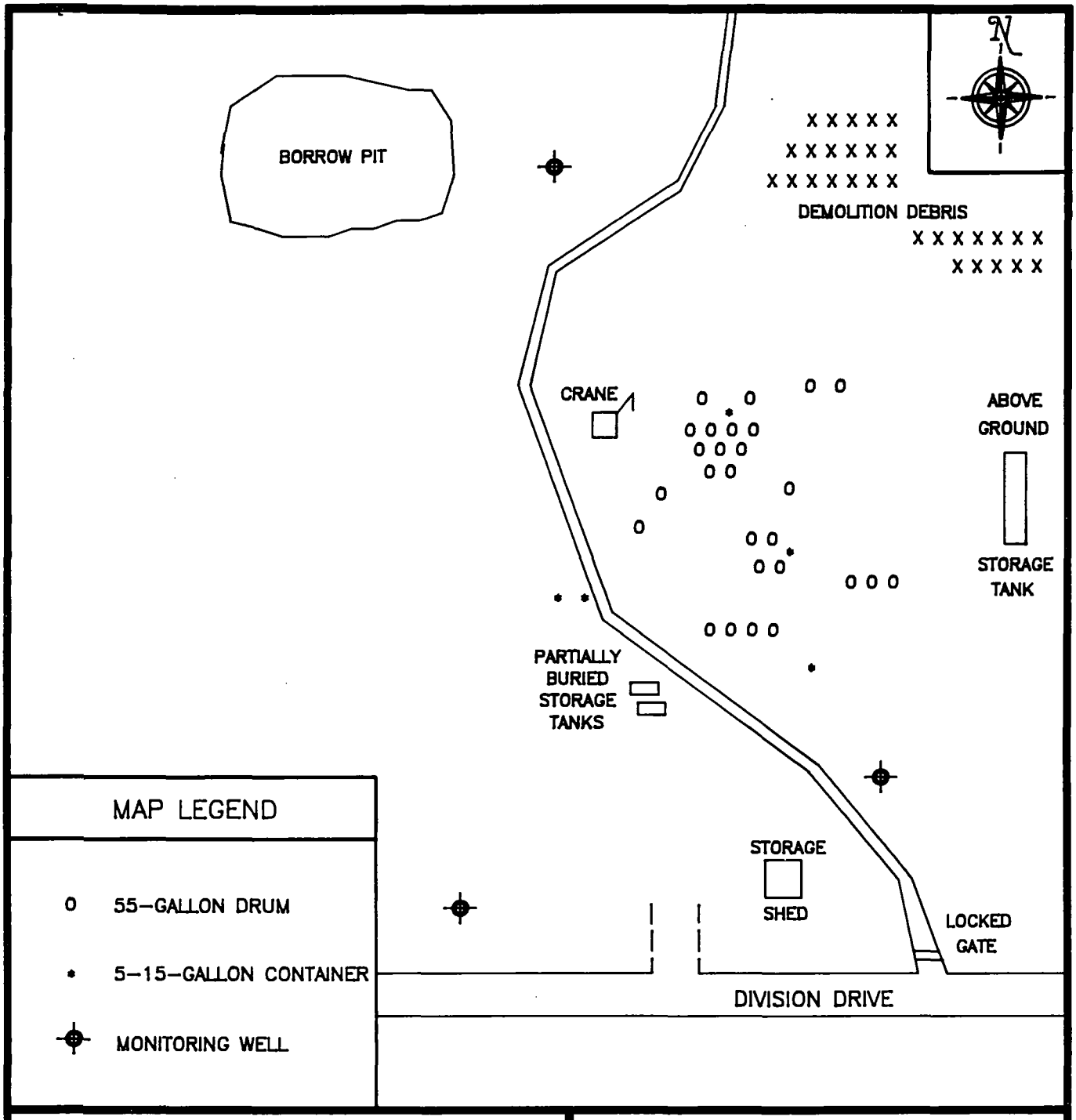


FIGURE 3

SITE MAP

ALBION-SHERIDAN TOWNSHIP LANDFILL

ALBION, MICHIGAN

NOT DRAWN TO SCALE

WESTON MANAGERS DESIGNERS/CONSULTANTS

DRAWN BY J. BOECKMAN	DATE 11-20-89	PCS # 2428
APPROVED BY J. BINKLEY	DATE 11-20-89	TDD # 5-8910-04

general area. Near the demolition piles, the TAT encountered an unidentified gentleman, who stated that Joseph Fitzpatrick of Albion, Michigan, owned the land containing the demolition debris. According to information provided by the CCHD, the land containing the demolition debris was previously known as Scott's Transfer Station.

Following the site tour, the TAT conducted a site inventory and evaluated the condition of all containers (drums, buckets, and tanks) visible on the landfill surface. In addition, the TAT estimated the volume of material in each container. During the inventory, the TAT observed the presence of three storage tanks, twenty-seven 55-gallon metal drums, and five small metal containers (Figure 3).

Two of the storage tanks observed were partially buried and connected to inoperable gasoline pumps; the storage capacity of each tank was estimated to be approximately 500 gallons. The first tank was empty, and because the second tank was locked, the type and quantity of any contents could not be determined. The third storage tank, which was positioned horizontally on the landfill surface, was empty, and its storage capacity was estimated to be 8,000 gallons. The exterior surface of most of the twenty-seven 55-gallon drums were rusted; eleven were empty and sixteen were full or partially full of material. Four of the five small metal containers held some amount of material; two contained unused industrial grease. Concurrent with the container inventory, the TAT conducted air monitoring with an HNu photoionization detector (HNu) equipped with an 11.7 eV probe. Only two readings were observed above the background level: inside drum B-4 (25 units) and at the opening of one of the two partially buried tanks (17 units).

On October 13, 1989, the TAT returned to the site and collected samples from four 55-gallon drums suspected to contain hazardous waste. Samples were collected from drums labeled B-4 (brown-colored liquid), B-9 (dark-colored sludge), B-16 (blue paint-like sludge), and B-17 (yellow paint-like sludge).

The four samples collected at the AST Landfill were shipped on October 17, 1989, to Grace Analytical Laboratory in Berkeley, Illinois. All samples were analyzed under TAT Analytical Services TDD# 5-8910-L07 for RCRA characteristics of hazardous waste: ignitability, corrosivity, and reactivity. In addition, a solvent scan was performed on the sample collected from drum B-4 because the HNu had previously registered 25 units when air monitoring was performed inside this drum.

4.0 ANALYTICAL RESULTS

The samples collected from drums B-9, B-16, and B-17 were each determined to have flash points below 140°F, thereby exhibiting the RCRA characteristic of ignitability (40 CFR Part 261.21). The

wastes in drums B-9, B-16, and B-17 are therefore classified as D001 hazardous wastes. Because the flash point of the sample collected from drum B-4 was >140°F, it was not considered to exhibit the characteristic of ignitability. None of the four samples exhibited RCRA characteristics of corrosivity or reactivity. Table 2 presents the results of the sample analysis for RCRA characteristics of hazardous waste.

During a solvent scan performed on the sample collected from drum B-4, a total of five VOCs were detected in the sample, and 23 additional VOCs were tentatively identified. The presence of these constituents identifies this material as a U.S. EPA F-listed (F001 - F005) Hazardous Waste. The results of the solvent scan analysis are presented in Table 3.

5.0 THREATS TO HUMAN HEALTH AND THE ENVIRONMENT

5.1 Threats As Related To The National Contingency Plan

The TAT observations and analytical results of sampling at the AST Landfill site identified two conditions, which may be considered to warrant a removal action as outlined in Section 300.65 (b) (2) of the National Contingency Plan. The actual or potential threats to human health and the environment present at the site are listed below:

- Actual or potential exposure to hazardous substances or pollutants or contaminants by nearby populations, animals, or food chain; and,
- Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that pose a threat of release.

5.2 Threat of Exposure

Because access to the AST Landfill is unrestricted, persons or animals entering the site may be exposed to hazardous wastes. At the time of the TAT investigation, no warning signs were posted concerning the potential or actual threat of exposure to hazardous wastes at the landfill.

5.3 Threat of Release

The drums containing the hazardous waste on site are unsecured; therefore, these drums could be opened or otherwise breached by vandals, hunters, or other persons, who are unaware of the hazardous waste contained in the drums. In addition, many of drums were severely rusted and of questionable integrity. Thus, either of

TABLE 2

ANALYTICAL RESULTS OF TAT SAMPLING[a]
CHARACTERIZATION OF HAZARDOUS WASTE
ALBION-SHERIDAN TOWNSHIP LANDFILL
ALBION, MICHIGAN
October 13, 1989

Sample No.	S-61	S-62	S-63	S-64
Drum No.	B-4	B-9	B-16	B-17
Sample Description	Brown-colored liquid	Dark-colored sludge	Blue paint-like sludge	Yellow Paint-like sludge
pH	8.5	6.6	6.5	6.0
Flash Point	>212°F	<75°F	<75°F	<75°F
Total Cyanide[b]	ND	ND	ND	ND
Amenable	ND	ND	ND	ND
Total Sulfide[b]	ND	ND	ND	ND
Reactive	ND	ND	ND	ND

[a]Analysis conducted by Grace Analytical Laboratory, Berkeley, Illinois, under TAT Analytical Services TDD# 5-8910-L07.

[b]Due to emulsion, samples were diluted ten times for cyanide and sulfide analysis.

ND = Not detected at method detection limit

TABLE 3

ANALYTICAL RESULTS OF TAT SAMPLING[a]
F001-F005 SOLVENT SCAN ANALYSIS
ALBION-SHERIDAN TOWNSHIP LANDFILL
ALBION, MICHIGAN
October 13, 1989
(All results in ug/kg)

Sample No.	S-61
Drum No.	B-4
Sample Description	Brown-colored liquid

COMPOUND	CONCENTRATION
Acetone	ND
N-Butyl Alcohol	ND
Carbon Disulfide	ND
Carbon Tetrachloride	ND
Chlorobenzene	ND
M-Cresol	ND
P-Cresol	ND
O-Cresol	ND
Cyclohexanone	ND
1,2-Dichlorobenzene	ND
Ethyl Acetate	ND
Ethylbenzene	31.2
Ethyl Ether	ND
Isobutanol	ND
Methanol	ND
Methylene Chloride	ND
Methyl Ethyl Ketone	ND
Methyl Isobutyl Ketone	ND
Nitrobenzene	ND
Pyridine	ND
Tetrachloroethylene	6.0
Toluene	17.0
1,1,1-Trichloroethane	17.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND
Trichloroethylene	ND
Trichlorofluoromethane	ND
Xylene (total)	319.0

[a]Analysis conducted by Grace Analytical Laboratory, Berkeley, Illinois, under TAT Analytical Services TDD# 5-8910-L07.

ND - Not Detected at Method Detection Limits.

these two factors could result in a release of waste material on site and potential soil and/or ground water contamination.

6.0 REMOVAL ACTION

At the request of U.S. EPA On-Scene Coordinator (OSC) Ralph Dollhopf, the TAT developed a Removal Action Plan for the removal and treatment/disposal of hazardous waste at the AST Landfill site. This immediate removal action is consistent with long-term efforts to mitigate threats at the site, because a potentially responsible party has not been identified, nor has a remedial investigation/ feasibility study been initiated.

7.0 COSTS

The following subsections present major activities and costs associated with a two-phase removal action alternative at the AST Landfill.

7.1 Removal Action - Phase I

Phase I removal actions would begin with mobilization of the Emergency Response Cleanup Contractor (ERCS) to the site and the development of a site safety plan. Subsequent to the development of the site safety plan, the ERCS contractor would collect a sample from all drums and containers of known or suspected hazardous waste. Based on the previous TAT drum inventory, a total of 20 such drums and containers are present on site. The TAT would next conduct field compatibility tests on all samples to determine composites for disposal analysis. Based on available information, identification of the following waste streams is anticipated during the compatibility tests:

- Flammable Organics
- Non-Flammable Organics
- Hazardous Waste Not Otherwise Specified (NOS)

Concurrent with the compatibility tests, the ERCS contractor would place each sampled drum and container in an 85-gallon-capacity overpack drum. This action is necessary because of the deteriorating condition of most drums and the lack of site security. Following completion of the compatibility tests, composite samples would be sent to three different disposal facilities for acceptance.

7.2 Removal Action - Phase II

Phase II of the removal action would consist of transportation and disposal of the anticipated waste streams identified in Section 7.1. For cost estimate purposes, it was assumed that the flammable

organics and hazardous waste NOS would be transported to the ThermalKem facility in Rock Hill, South Carolina, for incineration. The non-flammable organics would be transported to the Petro-Chem Processing facility in Detroit, Michigan, for reprocessing. These disposal arrangements consider the current ban on land disposal of untreated F001-F005 waste and the scheduled (May 1990) ban on land disposal of untreated RCRA characteristic ignitible waste.

Attachment A presents a removal cost projection for both Phase I and II removal actions at the AST Landfill.

8.0 COST SUMMARY

The total estimated cost for all Phase I and II removal activities at the Albion-Sheridan Township Landfill is approximately $63,500. The following cost projection summary lists the major expenditure categories.

Cost Projection Scenario: ALBION-SHERIDAN TWP LANDF I&II Page: 3

Projection ID No.: ASTL Date: 12/07/89
Cleanup Contractor: O.H. MATERIALS TAT Contractor: WESTON

Cost Projection Summary

Contractor Personnel	10,594.53
Contractor Equipment	2,429.61
Unit Rate Materials	4,388.90
At Cost Materials	120.70
Subcontractors	3,815.33
Waste Transportation	3,258.90
Waste Disposal	11,617.38
Cleanup Contractor Subtotal	36,225.35
Extramural Subtotal	36,225.35
15 % Extramural Contingency	5,433.80
Extramural Subtotal	41,659.15
TAT Personnel	7,477.03
Total TAT Costs	7,477.03
Extramural Subtotal	49,136.18
15 % Project Contingency	7,370.43
Total Extramural Cost	56,506.61
EPA Regional Personnel	2,562.00
EPA Headquarters Direct	0.00
(10 % of Regional Hours)	
EPA Indirect	4,270.00
EPA Total	6,832.00
Project Total	63,338.61

ATTACHMENT A

Removal Cost Projection - Phases I & II

Albion-Sheridan Township Landfill

Albion, Michigan

Projection ID No.: ASTL
Cleanup Contractor: O.H. MATERIALS

Date: 12/07/89
TAT Contractor: WESTON

roject Scope

Number	Step/Milestone	Estimated Duration (Days)
1	MOBILIZE SITE AND SETUP EQUIP	1
2	SAMPLE ALL DRUMS & CONTAINERS	1
3	TEST COMPATIBLITY & OVERPK DRUMS	1
4	SECURE OVERPAKS & DEMOB SITE	1
5	REMOB SITE & TRANSPORT WASTE	1
6	TRANSPORT WASTE & DEMOB SITE	1

Projection ID No.: A3NL Date: 12/07/89
Cleanup Contractor: O.H. MATERIALS TAT Contractor: WESTON

ontractor Personnel

Job Category	No. Employees	Nm. Days	Hrs per day	Labor	PD,Lodge Travel	Total Charge
J VISOR	1	6	10.0	2112.00	477.97	2589.97
LEANUP TECH-HAZ	1	6	10.0	1512.00	477.97	1989.97
QUIP OPERATOR	1	6	10.0	1908.00	477.97	2385.97
LO CLERK/TYPIST	1	6	10.0	1512.00	477.97	1989.97
AB TECHNICIAN	1	4	10.0	1320.00	318.65	1638.65

Total Personnel Cost: 10594.53

ontractor Equipment

Equipment Item	Req Days	Stby Days	Mob/Dmob Hours	Decon Hours	Mileage	Total Charge
R (PICK UP	5	0	0	0	N/A	148.80
RL OFF 8X40 EQUIP	4	0	0	0	N/A	493.94
ENERATOR 10 KW	1	0	0	0	N/A	176.96
KUM GRAPPLER 360	5	0	0	0	N/A	546.14
ORTABLE HEAT UNIT	4	0	0	0	N/A	92.00
ORTABLE HEAT UNIT	1	0	0	0	N/A	92.00
ECON STATION FIELD	4	0	0	0	N/A	344.62
OMPUTER PORTABLE-PC	5	0	0	0	N/A	146.15
ASCADE SYSTEM	4	0	0	0	N/A	240.00
ASSENGER VAN	2	0	0	0	N/A	149.00

Total Equipment Cost: 2429.61

nit Rate Material

Material Name	Use	Unit Cost	No. Units	Total Charge
VERPACK DRUMS	CONTAIN WASTE	125.00	25.0 DRUM	3771.88

Projection ID No.: ASTL Date: 12/07/89
Cleanup Contractor: O.H. MATERIALS TAT Contractor: WESTON

nit Rate Material

Material Name	Use	Unit Cost	No. Units	Total Charge
S) JNAL PRO EQUIP	LEVEL B	85.20	3.0	308.51
RSONAL PRO EQUIP	LEVEL C	85.20	3.0	308.51
	Total Unit Rate Material Cost:			4388.90

t Cost Material

Material Name	Use	Quantity/Amount	Total Charge
MPAT TEST SUPPLY	COMPATBLTY TES	20 SAMPLES	120.70
	Total At Cost Material Cost:		120.70

bcontractors

Subcontractor	Service	Total Charge
R SUPPLIES, INC.	BREATHING AIR	90.53
SPOSL FACILITY 1	DISPOSL ACCEPT FEE	1086.30
SPOSL FACILITY 2	DISPOSL ACCEPT FEE	1086.30
SPOSL FACILITY 3	DISPOSL ACCEPT FEE	1086.30
ARD-A-SITE CO.	SITE SECURITY	405.55
RT-O-POTTY CO.	PORTABLE TOILETS	60.35
	Total Subcontractor Cost:	3815.33

Projection ID No.: ADTL Date: 12/07/89
Cleanup Contractor: U.S. MATERIALS TAT Contractor: WESTON

Waste Transportation

Waste Type	Amount	No. Loads	Cost per Ld. Mile	No. Miles	Total Charge
L ORGN&SOLID	15 DRMS/CONT	1	4.00	600	2896.80
ON-FLAM ORGNCS	5 DRMS/CONT	1	4.00	75	362.10
		Total Waste Transportation Cost:			3258.90

Waste Disposal

Waste Type	Disposal Method	Units	No. Units	Unit Cost	Total Charge
LAM ORGN&SOLID	INCINERATION	DRUMS	15	500.00	9052.50
ON-FLAM ORGNCS	REPROCESSING	DRUMS	5	425.00	2564.88
		Total Waste Disposal Cost:			11617.38

TAT Personnel

Level	No. TATMs	No. Days	Hrs per day	Hr Rate	Labor	PD,Lodge Travel	Total Charge
L2	1	7	10.0	27.84	3702.72	877.80	4580.52
L2	1	4	7.5	27.84	1692.67	0.00	1692.67
L3	1	2	8.0	31.35	953.04	250.80	1203.84
			Total TAT Personnel Cost:				7477.03

PA REGIONAL PERSONNEL COSTS

Title	No. Days	Hrs per Day	Hr Rate	Labor	PD,Lodge Travel	Total Charge
ON-SCENE COORD	7	10.0	30.00	2100.00	462.00	2562.00

Projection ID No.: ASTL Date: 12/07/89
Cleanup Contractor: O.H. MATERIALS TAT Contractor: WESTON

EPA REGIONAL PERSONNEL COSTS

Title	No. Days	Hrs per Day	Hr Rate	Labor	PD,Lodge Travel	Total Charge

EPA Regional Personnel Cost:	2562.00
EPA Headquarters Cost: (Based on 10 % of Regional hours)	0.00
EPA Indirect Cost: (Based on 70 hours @ $61 per hour)	4270.00
Total EPA Cost:	6832.00

ATTACHMENT B

Site Assessment Photographs

Albion-Sheridan Township Landfill

Albion, Michigan

ROLL 1 PHOTO 0
Albion-Sheridan Township Landfill
Albion, Michigan
View of demolition debris along the northeast perimeter of landfill. Area being viewed by field investigator from Center for Environmental Health Sciences - Michigan Department of Public Health.
Photo by J. Boeckman JB October 12, 1989

ROLL 1 PHOTO 1
Albion-Sheridan Township Landfill
Albion, Michigan
View of demolition debris along northeast edge of of landfill. Majority of debris consisted of discarded applainces and building rubble.
Photo by J. Boeckman JB October 12, 1989

ROLL 1 PHOTO 2
Albion-Sheridan Township Landfill
Albion, Michigan
View of demolition debris that had been placed along the northeast edge of the landfill. Farm and swine operation located in photo background.
Photo by J. Boeckman JB October 12, 1989

ROLL 1 PHOTO 3
Albion-Sheridan Township Landfill
Albion, Michigan
View of storage shed located along southern entrance to the landfill. The 55-gallon drum contained approximately ten gallons of unused motor oil. Locked shed held an unknown number of 55-gallon drums; drum contents were unknown.
Photo by K. M. Hanlon KMH October 12, 1989

ROLL 1 PHOTO 4
Albion-Sheridan Township Landfill
Albion, Michigan
View of two partially buried gasoline storage tanks. Tank capacity was approximately 500 gallons each. Tank #1 was empty; all openings to tank #2 were either locked or rusted shut and prevented further investigation.
Photo by K. M. Hanlon KMH October 12, 1989

ROLL 1 PHOTO 5
Albion-Sheridan Township Landfill
Albion, Michigan
View of abandoned 55-gallon drums near the center of the landfill. The contents of the drum labeled B4 were sampled and analyzed; the material was a RCRA F-listed waste.
Photo by K. M. Hanlon KMH October 12, 1989

ROLL 1 PHOTO 6
Albion-Sheridan Township Landfill
Albion, Michigan
View of empty, rusted drums scattered on the surface of the landfill. Near the drums were the charred remains of what appeared to be a small wooden structure.
Photo by K. M. Hanlon KMH October 12, 1989

ROLL 1 PHOTO 7
Albion-Sheridan Township Landfill
Albion, Michigan
View of abandoned drums at the landfill. A total of twenty-seven 55-gallon drums were found on the surface of the landfill; only sixteen of the total contained any material.
Photo by K. M. Hanlon KMH October 12, 1989

ROLL 1 PHOTO 8
Albion-Sheridan Township Landfill
Albion, Michigan
View of abandoned drums at the landfill. Note the large above-ground storage tank in the photo background.
Photo by K. M. Hanlon October 12, 1989

ROLL 1 PHOTO 9
Albion-Sheridan Township Landfill
Albion, Michigan
View of abandoned drums and other debris found on the surface of the landfill.
Photo by K. M. Hanlon October 12, 1989

ROLL 1 PHOTO 10
Albion-Sheridan Township Landfill
Albion, Michigan
TAT members Weed and Hanlon collecting a sample of liquid from drum B4 at the landfill. A drum thief was used to collect a 16 oz. sample from the drum.
Photo by J. Boeckman JB October 13, 1989

ROLL 1 PHOTO 11
Albion-Sheridan Township Landfill
Albion, Michigan
TAT members Weed and Hanlon collecting samples from drums B16 and B17. Both drums contained material which exhibited the characteristic of ignitability.
Photo by J. Boeckman JB October 13, 1989